IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No.	:	10/036,417
Applicant	:	Ernest A. Carroll
Filed	:	January 7, 2002
TC/A.U.	:	3661
Examiner	:	Olga Hernandez

Docket No.	:	G005
Title	:	METHOD OF AND APPARATUS FOR ACQUIRING AERIAL IMAGERY FOR PRECISION FARMING
Customer No.	:	41245

APPEAL BRIEF

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S I R:

This Appeal is taken from the FINAL REJECTION of claims 1 through 27 as presented in the Office Action of November 9, 2003 (Paper No. 5) and the Advisory Office Action of March 11, 2004.

REAL PARTY IN INTEREST

The real party in interest hereto is Appellant Ernest A. Carroll.

RELATED APPEALS AND INTERFERENCES

This appeal is the first appeal before the Office.

STATUS OF THE CLAIMS

All of the presently pending claims 1 through 27 now stand FINALLY REJECTED as of November 19, 2003 (Paper No. 5), which was reaffirmed in the Advisory Action of March 11, 2004.

The rejection of claims 1 through 27 is hereby appealed.

STATUS OF THE AMENDMENTS

An Office Action was mailed on July 10, 2003 (Paper No. 3). A first, responsive amendment was filed on September 29, 2003 (Paper No. 4). A second Office Action finally rejecting claims 1 through 27 was mailed November 19, 2003 (Paper No. 5). An amendment after Final Rejection was filed on February 19, 2004. An Office Advisory Action confirming the FINAL REJECTION of claims 1 through 27 was mailed on March 11, 2004. A notice of appeal was mailed on April 8, 2004 and filed April 11, 2004.

SUMMARY OF THE INVENTION

The invention pertains to acquisition of aerial imagery using a lightweight, unmanned, remotely guided, propeller-driven aircraft. The aircraft weighs less than 55 pounds which is less than the weight at which the Federal Aviation Administration (FAA) imposes restrictive operating requirements. Imagery is acquired using one or more interchangeable data modules using different modalities. Acquired images may be multispectral, hyperspectral, ultraspectral, thermal (i.e., infrared, etc.), synthetic aperture radar, laser radar, or any combination thereof.

Once acquired, the images are processed and used to determine an area-specific agricultural treatment for the field from which the images were acquired. Agricultural treatments may include application of water, pesticide, fungicide, seed, fertilizer or lime, or a physical operation such as pruning or trimming. Regardless of the agricultural operation to be performed, it is performed in a customized manner specific to each particular identified area of the field as indicated by an analysis of the acquired aerial images.

ISSUES

Did the Patent and Trademark Office err in finally rejecting claims 1 through 7, 12 through 14, 17, 18, and 22

through 27 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,529,615 for METHOD OF DETERMINING AND TREATING THE HEALTH OF A CROP, issued March 4, 2003 to Larry I. Hendrickson et al. in view of United States Patent No. 4,172,632 for METHOD AND APPARATUS FOR PRODUCING THREE-DIMENSIONAL SHADOW IMAGES, issued October 30, 1979 to Lawrence Holmes, Jr.?

Did the Patent and Trademark Office err in finally rejecting claims 8 through 11, 15, 16, and 19 through 21 under 35 U.S.C. §103(a) as being unpatentable over HENDRICKSON et al. in view of United States Patent No. 5,467,271 for MAPPING AND ANALYSIS SYSTEM FOR PRECISION FARMING APPLICATIONS, issued November 14, 1995 to Robert J. Abel et al.?

GROUPING OF THE CLAIMS

Since two sets of claims were rejected based on different art and arguments, the claims should not be grouped together.

ARGUMENT

The Honorable Board is respectfully requested to reverse the rejection of claims 1 through 27.

The invention serves a unique purpose, a purpose not served by any known approach, either patented or in the public domain. The Examiner failed to cite any reference that anticipates the invention, nor any reference that renders the invention obvious.

As the world population increases, the criticality of maximizing food yield from the land increases. In many cases, areas of land (i.e., fields) have been over farmed and the land is at or near exhaustion. What may have been in the past small plots of land used for different agricultural purposes, are now often combined into large, unified fields suitable for contemporary mechanized agriculture. Different portions of such large fields may need different agricultural treatments. The term agricultural treatments as used herein, applies to any material or operation which may be performed on a particular field. This includes, but is not limited to, application of seed, nutrient (e.g., fertilizer), water, lime, organic matter, water, herbicides, pesticides, trimming, mowing, pruning, harvesting, etc. It is simply not cost effective to uniformly apply a particular agricultural treatment to an entire field. In fact, harm might conceivably

be inflicted by a uniform application of a particular treatment.

What is needed, therefore, is a way to apply a particular agricultural treatment non-uniformly to regions of a field on an as-needed basis. The science of such specific application of an agricultural process is called precision farming.

Precision farming first requires an analysis of a field to determine an appropriate distribution of the agricultural process on an as-needed basis. Typically, such an analysis is based upon aerial imagery of the particular field. The use of such aerial imagery for such an analysis is known. Heretofore, however, the collection of such imagery has been problematic. In the prior art, such imagery has been obtained either from satellites or by manned aircraft flying over a field in a.

Unfortunately, these image acquisition techniques have placed many factors outside the hands of the farmer (i.e., the landowner or operator). First, the time of image acquisition may be critical. At certain times in the growing season, the delay of a day or two in performing an agricultural operation may severely affect crop yield. Second, the type of imagery may be critical to the crop being grown; the farmer may have little choice but to accept off-the-shelf image types from a image provider. Third, imagery obtained in accordance with these prior art methods is typically expensive.

The claimed method of the instant application overcomes these three major limitations of the prior art by providing a new method for aerial image acquisition. A light-weight, unmanned, remotely guided aircraft weighing less than 55 pounds is equipped with interchangeable sensor systems. This approach provides may benefits not seen in the prior art. Such an aircraft is significantly less expensive than are a full-size, manned aircraft. Consequently, a small farm or other agricultural operation could afford to own such an image acquisition system. Having the inventive image acquisition system on site allows an image acquisition mission to be flow at the precise time that the data is needed. Finally, the cost of the acquired images is significantly less than for images obtained using prior art acquisition methods. Consequently, many more image acquisition flights may be practical during a growing season than have heretofore been practical.

Even if a particular farm does not own an aircraft, such an aircraft may be readily shipped from place to place using

overnight air freight when such expedited shipping is required.

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Claims 1 - 7, 12 - 14, 17, 18, 22 - 27 were finally rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,529,615 for METHOD OF DETERMINING AND TREATING THE HEALTH OF A CROP, issued March 4, 2003 to Larry I. Hendrickson et al. in view of United States Patent No. 4,172,632 for METHOD AND APPARATUS FOR PRODUCING THREE-DIMENSIONAL SHADOW IMAGES, issued October 30, 1979 to Lawrence Holmes, Jr.

HENDRICKSON et al. disclose a system for utilizing imagery acquired from a variety of different platforms including "from a land vehicle, airplane, helicopter, pilotless drone, satellite, etc." (Column 11, lines 26 - 28). Nowhere do HENDRICKSON et al. teach or suggest the specifics of Appellant's miniature, unmanned aircraft weighing less than fifty-five pounds, as recited in the claims. In fact, the Examiner clearly stated: "HENDRICKSON et al. do NOT teach the specifics of Appellant's miniature aircraft weighing less than 55 pounds, and the image acquisition apparatus, synthetic aperture radar," etc. (Final Office Action dated February 19, 2004, page 3, lines 5 - 7).

However, the Examiner then further stated that: "Holmes teaches the use of a miniature aircraft (column 53, lines 33 - 35)." Appellant respectfully but strongly disagrees. HOLMES, Jr. teaches a solid model of an aircraft used within an imaging system to provide a sophisticated, realistic image to a viewer. The solid model of an aircraft is simply that: a non-functional model that does not fly or move under its own power. Any perceived motion of the model aircraft is induced by external actuators acting thereupon such that a projected shadow or other image of the model is realistic when viewed by a user. The HOLMES, Jr. model aircraft certainly does not participate in any kind of data acquisition activity. There is no teaching or suggestion of a functioning, miniature, under 55 pound, remotely-guided, powered aircraft such as that disclosed and claimed by Appellant. References are not properly combinable or modifiable if their intended function is destroyed. In re Gordon, 221 U.S.P.Q. 1125 (Fed. Cir. 1984) In short, there is no technological motivation for the Examiner's combination of HENDRICKSON et al. and HOLMES, Jr., the intended function of either would be destroyed by the combination.

Moreover, there would be no motivation to combine the teaching of HOLMES Jr. with that of HENDRICKSON et al. In

fact, Appellant believes HOLMES Jr. to be completely non-analogous art. In re Winslow, 151 U.S.P.Q. 48 (CCPA 1966), the court stated:

Section 103 requires us to presume full knowledge by the inventor [more properly, by a person of ordinary skill in the art] of the prior art in the field of his endeavor... but it does not require us to presume full knowledge by the inventor of prior art outside the field of his endeavor, i.e., of "nonanalogous" art. In that respect, it only requires us to presume that the inventor would have had that ability to select and utilize knowledge from other arts reasonably pertinent to his particular problem which would be expected from a man of ordinary skill in the art to which the subject matter pertains.

A person skilled in the design and flying of a miniature, unmanned aircraft such as that taught by Appellant or a person knowledgeable in aerial image acquisition would and should not be expected to be skilled in the complex art of 3-D image production, especially 3-D shadows, as is taught by HOLMES, Jr. Appellant believes that combining HENDRICKSON et al. and HOLMES JR. is clearly improper and, in any event, fails to render the invention obvious. In ACS Hospital Systems Inc. v. Montefiore Hospital et al., 221 U.S.P.Q. 929 (CAFC 1984), the Court of Appeals for the Federal Circuit upheld this concept by stating:

Obviousness cannot be established by combining teachings of prior art to produce claimed [sic] invention, absent some teaching or suggestion supporting combination; teachings of references can be combined only if there is some suggestion or incentive to do so, under 35 U.S.C. §103.

As admitted by the Examiner, HENDRICKSON et al. alone fail to obviate the claims to Appellant's aircraft and image acquisition system. HOLMES, Jr. fail to teach or suggest an under 55 pound aircraft capable of flying or gathering aerial imagery as does Appellant's aircraft, but rather teaches a non-operative, solid model aircraft used solely for producing a shadow image of itself. Combining HENDRICKSON et al. with HOLMES, Jr. is deemed insufficient by the Appellant. It would also make sense that the combination of an improperly cited reference (i.e., HOLMES, Jr.) possibly teach or suggest the combination of its teaching with another (i.e., HENDRICKSON). Consequently, that combination is prevented. ACS Hospital Systems, Inc v. Montefiore Hospital et al. ibid.

Claims 8 - 11, 15, 16, and 19 - 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over HENDRICKSON et al. in view of United States Patent No. 5,467,271 for MAPPING AND ANALYSIS SYSTEM FOR PRECISION FARMING APPLICATIONS, issued November 14, 1995 to Robert J. Abel et al. ABEL et al. teach a method for mapping and analyzing images but are silent regarding any detail of an airborne platform for gathering useful aerial imagery.

ABEL et al. address issues of controlling image gathering from an airborne station 14 (incorrectly identified as reference number 18 at column 7, lines 14 and 17) for image gathering. An air-base (or air-borne) station is used for image gathering: "Mapping and analysis system 10 includes an air-based station 14 (further illustrated in FIG. 2) carried by an aircraft 16 and a ground-based station 18. While aircraft 16 is shown as an airplane, other aircraft, satellites, etc. are contemplated. Air-based station 14 includes image sensing devices 22 for measuring spatial and spectral resolution data of a farming field 24 under study (Column 1, lines 33 - 39). Certainly, the ABEL et al. system does not specifically teach a miniature, unmanned aircraft as recited in Appellant's claims. In addition, while the term "predetermined flight path" appears thrice in the ABEL et al. specification, there is no enablement provided therein. While references which may not qualify as prior art under 35 U.S.C. §102, they may still be combined for purposes of establishing obviousness under 35 U.S.C. §103, the scope of the reference is limited ONLY to that which is disclosed therein. Symbol Technologies Inc. v Opticon Inc., 19 U.S.P.Q. 2d 1241 (CAFC, 1991) There is certainly no teaching in ABEL et al. which suggests Appellant's unique air frame. By providing such broad teaching as "other aircraft, satellites, etc.," ABEL et al. actually teach away from Appellant's very specific, under 55 pound aircraft. There would certainly be no motivation whatsoever to try to package the complex system of ABEL et al. into an under 55 pound aircraft. Appellant's system works precisely because of the light payload that can be carried by a very light aircraft. Consequently, adding the teaching of ABEL et al. to that of HENDRICKSON et al. still fails to suggest and thus obviate Appellant's unique airborne platform (i.e., the under 55 pound, remotely guided miniature aircraft), as recited in the claims.

Specifically, claims 8 and 15 recite the added limitation of the microprocessor being "disposed to control the automated flight control apparatus to achieve a predetermined flight path." HENDRICKSON et al. are silent regarding automated flight control and ABEL et al. offer no enablement other than

suggesting the possibility of such flight path control. Because Appellant's described and claimed air frame is already believed to be patentably distinct from the teaching of HENDRICKSON et al., the addition of the limitation recited in claims 8 and 15 should be allowable, as claims 8 and 15 are dependent on an allowable claim.

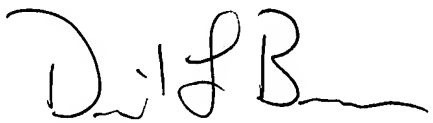
Regarding claims 9, 10, 11, 16, and 19 - 21, the respective recitations of GPS, using environmental data to control the aircraft, and choosing the area to be overflown, are not claimed in a vacuum. Of course these are all "old." However, the combination of these limitations with the unique, non-obvious subject matter of Appellant's independent claims merely provides additional limitations to those allowable base claims. The patentability of dependent claims stands or falls with the independent claim from which it depends. Shelcore, Inc. v. Durham Industries, Inc., 223 U.S.P.Q. 584 (Fed. Cir. 1984)

Appellant believes for at least the reasons stated hereinabove, that the instant claims are clearly patentable over HENDRICKSON et al., alone, or in combination with ABEL et al. and/or HOLMES, Jr.

CONCLUSION

The Honorable Board is respectfully requested to reverse the rejection of claims 1 through 27 and allow the subject application to issue as a patent.

Respectfully submitted,



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APPENDIX

1. A method of practicing precision farming wherein at least one agricultural operation is to be conducted with respect to a predetermined agricultural field, comprising the steps of:

providing an air breathing, self-powered miniature aircraft weighing less than fifty-five pounds and having image acquisition apparatus comprising at least one of the types: visible light camera, thermal (e.g., infrared) image acquisition apparatus, synthetic aperture radar, and laser radar carried thereaboard;

surveying the agricultural field by acquiring at least one image of the agricultural field from the image acquisition apparatus;

analyzing the at least one image obtained in said step of surveying the agricultural field to determine at least one local condition of the agricultural field and at least one requirement of the agricultural field relative to an agricultural operation; and

conducting the agricultural operation with respect to the agricultural field in a manner corresponding to the at least one requirement of the agricultural field as determined in said step of analyzing the at least one image.

2. The method according to claim 1, wherein said step of conducting an agricultural operation comprises the further step of applying at least one agricultural resource to the agricultural field according to at least one requirement determined in said step of analyzing the at least one image.

3. The method according to claim 1, wherein said step of surveying the agricultural field comprises the further step of causing the aircraft to gain altitude under said aircraft's own power.

4. The method according to claim 3, wherein said step of surveying the agricultural field comprises the further step of launching the aircraft from the ground.

5. The method according to claim 1, comprising the further step of launching the aircraft entirely under said aircraft's own power.

6. The method according to claim 1, wherein said step of surveying the agricultural field comprises the further step of controlling the flight path such that the entire agricultural field being surveyed is overflown in a single flight.

7. The method according to claim 6, wherein said step of controlling the flight path of the aircraft comprises the further step of causing the aircraft to fly in a sweeping pattern wherein flight of the aircraft is controlled to include at least a first turn in one direction when overflying the agricultural field and a second turn in an opposed direction when overflying the agricultural field.

8. The method according to claim 6, comprising the further step of providing automated flight control apparatus aboard the aircraft and a microprocessor having programming aboard the aircraft, wherein the microprocessor is disposed to control the automated flight control apparatus to achieve a predetermined flight path.

9. The method according to claim 8, comprising the further steps of

providing a radio frequency receiver disposed to communicate with a Global Positioning System, wherein the radio frequency receiver is disposed in communication with the microprocessor, and

utilizing location signals from the Global Positioning System to control at least partially the flight path of the aircraft.

10. The method according to claim 9, comprising the further step of providing a redundant navigation system complementing location determination provided by said step of utilizing location signals from the Global Positioning System.

11. The method according to claim 10, comprising the further steps of:

providing the miniature aircraft with a barometric altitude sensor, an airspeed sensor, and roll and pitch sensors;

operably connecting the barometric altitude sensor, the airspeed sensor, and the roll and pitch sensors to the microprocessor; and

determining location by utilizing data obtained from the barometric altitude sensor, the airspeed sensor, and the roll and pitch sensors.

12. The method according to claim 1, wherein said step of surveying the agricultural field comprises the further step of conducting plural complementing flights over the agricultural field being surveyed.

13. The method according to claim 12, wherein said further step of conducting plural complementing flights comprises the further step of utilizing at least one additional miniature aircraft.

14. The method according to claim 12, wherein said step of controlling the flight path of the aircraft comprises the further step of causing the aircraft to fly in a sweeping pattern wherein flight of the aircraft is controlled to include at least a first turn in one direction when overflying the agricultural field and a second turn in an opposed direction when overflying the agricultural field.

15. The method according to claim 12, comprising the further step of providing automated flight control apparatus aboard the aircraft and a microprocessor having programming aboard the aircraft, wherein the microprocessor is disposed to control the automated flight control apparatus to achieve a predetermined flight path.

16. The method according to claim 15, comprising the further steps of

providing a radio frequency receiver disposed to communicate with a Global Positioning System, wherein the radio frequency receiver is disposed in communication with the microprocessor, and

utilizing location signals from the Global Positioning System to control at least partially the flight path of the aircraft.

17. The method according to claim 16, comprising the further step of providing a redundant navigation system complementing location determination provided by said step of utilizing location signals from the Global Positioning System.

18. The method according to claim 17, comprising the further steps of:

providing the miniature aircraft with a barometric altitude sensor, an airspeed sensor, and roll and pitch sensors;

operably connecting the barometric altitude sensor, the airspeed sensor, and the roll and pitch sensors to the microprocessor; and

determining location by utilizing data obtained from the barometric altitude sensor, the airspeed sensor, and the roll and pitch sensors.

19. The method according to claim 1, comprising the further step of causing the aircraft to fly under control to a predetermined location after overflying the agricultural field being surveyed.

20. The method according to claim 1, comprising the further step of causing the aircraft to fly under control to a location outside of the agricultural field being surveyed.

21. The method according to claim 1, comprising the further step of causing the aircraft to fly under control to a location proximate said aircraft's launch location.

22. The method according to claim 1, wherein said step of surveying the agricultural field comprises the further step of acquiring a plurality of multispectral images of the agricultural field from the aircraft.

23. The method according to claim 1, wherein said step of surveying the agricultural field comprises the further step of acquiring a plurality of hyperspectral images of the agricultural field from the aircraft.

24. The method according to claim 1, wherein said step of surveying the agricultural field comprises the further step of acquiring a plurality of ultraspectral images of the agricultural field from the aircraft.

25. The method according to claim 1, wherein said step of providing an air breathing, self-powered miniature aircraft having image acquisition apparatus carried thereaboard comprises the further step of providing thermal image acquisition apparatus thereaboard.

26. The method according to claim 1, wherein said step of providing an air breathing, self-powered miniature aircraft having image acquisition apparatus carried thereaboard comprises the further step of providing synthetic aperture radar image acquisition apparatus thereaboard.

27. The method according to claim 1, wherein said step of providing an air breathing, self-powered miniature aircraft having image acquisition apparatus carried thereaboard comprises the further step of providing laser radar image acquisition apparatus thereaboard.

TFW AF$ 3661

PTO/SB/21 (04-04)
Approved for use through 07/31/2006. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

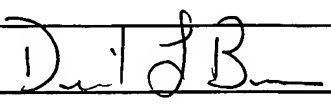
Application Number	10/036,417
Filing Date	01/07/2002
First Named Inventor	Ernest A. Carroll
Art Unit	3661
Examiner Name	Olga Hernandez
Total Number of Pages in This Submission	
Attorney Docket Number	G005

ENCLOSURES *(check all that apply)*

- [X] Fee Transmittal Form
  - [X] Fee Attached
- [ ] Amendment / Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
- [ ] After Allowance communication to Technology Center (TC)
- [ ] Appeal Communication to Board of Appeals and Interferences
- [X] Appeal Communication to TC **(Appeal Notice, Brief, Reply**
- [ ] Proprietary Information
- [ ] Status Letter
- [ ] Other Enclosure(s) *(please identify below)*:

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	David L. Banner
Signature	
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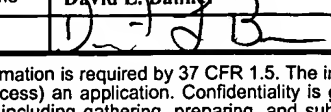
Signature		Date	6/10/04

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Approved for use through 07/31/2006. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) **$165.00**

Complete if Known	
Application Number	10/036,417
Filing Date	01/07/2002
First Named Inventor	Ernest A. Carroll
Examiner Name	Olga Hernandez
Art Unit	3661
Attorney Docket No.	G005

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money ☐ Other ☐ None

☐ Deposit Account:

Deposit Account Number

Deposit Account Name

The Director is authorized to: *(check all that apply)*

☐ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additonal fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES FOR UTILITY AND

	Extra Claims			Fee from below		Fee Paid
Total Claims		-20** =	0	X	=	0.00
Independent Claims		- 3** =	0	X	=	0.00
Multiple Dependent					=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) **$0.00**

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non - English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	165.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR § 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Statement	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) **$165.00**

SUBMITTED BY				Complete *(if applicable)*	
Name	David L. Banner	Registration No. (Attorney/Agent)	39,898	Telephon	607-722-6600
Signature				Date	6/10/04

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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